A methodology for measuring software development productivity using Eclipse IDE

Ádám Zoltán Végh[a], Gábor Antal[b], Vilmos Bilicki[c]

University of Szeged, Department of Software Engineering
[a]azvegh@inf.u-szeged.hu
[b]antalg@inf.u-szeged.hu
[c]bilickiv@inf.u-szeged.hu

Abstract

During software development processes many methodologies and technologies are used which can be examined and compared by many points of view. One of the important aspects is the development productivity which defines development time and costs significantly. It is the composition of many factors but actually not all relevant and affecting factors and their relationships are known [1]. Measuring the development productivity can be very useful if we would like to see that:

- How much of the total development time takes the real development?
- How long is the real development time of specific software components and layers?
- How much time does a bug fix or the implementation of a new feature take in specific components or layers during software evolution?

Beside the development time it is also worth to examine the quality of the software using various software metrics. Therefore a special tool is needed which can perform real time productivity measurements during the development but at present there are only a few tools for this task with limited measurement capabilities [2][3]. The goal of this paper is to introduce a methodology for measuring productivity (even for specific software units) with defining a list of relevant factors and events to be observe (e.g. file and user interface events). Besides, this paper presents a measurement tool for monitoring development productivity in the Eclipse IDE [4]. We have successfully measured some former projects using this Eclipse-based tool and evaluated the measurement results to examine the development time of specific application layers.

Keywords: software development, productivity, development time, metrics.

References

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